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(SUN) 3.23'03 17:12/ST. 17:11/NO. 4861207569 P 1

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To	Company	Fax No.	Confirmation No.
Examiner Richard Ellis	U.S. Patent &	703 746 7238	703 305 3900
Supervisory Examiner Eddie Chan	Trademark Office, Group 2183	703-305-9731	703-305-9712

FROM:	David E. Boundy	DATE:	March 23, 2003
DIRECT DIAL:	(212) 756-2522	Number of Pages:	10
FILE NO.:	005231.0003		

Applicant(s): John S. Yates, Jr., et al.

Serial No.: 09/385,394

Art Unit: 2183

Filed: August 30, 1999

Examiner: Richard Ellis

Title: COMPUTER WITH TWO EXECUTION MODES

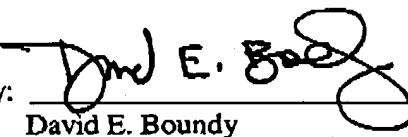
AFTER FINAL – EXPEDITED PROCEDURE

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Dated: March 23, 2003

By: 
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit: 2183

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AFTER FINAL - EXPEDITED CONSIDERATION

THIRD REQUEST FOR WITHDRAWAL OF FINALITY
OF ACTION OF OCTOBER 1, 2002

AND

SUMMARY OF TELEPHONE INTERVIEW

Applicant thanks the Examiner for a series of substantial telephone interviews during the week of March 17, 2003. This paper is presented for three purposes:

- A. To consolidate the issues now pending with regard to claim 22, and frame an inquiry that should result in a precise analysis of claim 22 and Richter '684 that will enable Applicant and Examiner to reach an agreement.
- B. To memorialize a number of agreements that were reached in telephone interviews during the week of March 17.
- C. To renew the prior requests for withdrawal of finality of the rejections of October 1, 2002. During the telephonic interview, a number of agreements were reached that confirm that the Office Action of October 2002 is prematurely final.

I. Claim 104

It has been agreed that the construction of the word "necessarily" in claim 104 applied in the first and second Office Actions was incorrect, and that the rejection of the claim in view of Richter '684 is withdrawn.

II. Claim 22

Applicant withdraws the questions that are now pending by voice mail, and proposes an alternative approach to claim 22 that should bypass the issues on which no agreement has been reached. Applicant requests that the examiner propose a precise fact pattern under which Richter's device might meet claim 22. Applicant believes that no such scenario exists. If any such scenario does exist, Applicant proposes that it would likely follow the following pattern:

- a. Richter starts out in some mode, which we may designate "mode a." In the telephone interview, it was agreed that Richter '684 has the following three modes:
 - x86 instruction set, little endian memory access
 - PowerPC instruction set, little endian memory access
 - PowerPC instruction set, big endian memory access
 - It is known in the art that data registers are always big endian – during an addition, the carry out from bit 15 should carry in to bit 16, not bit 0.
- b. The computer performs some action or actions under which "execution flow[s] or transfer[s] from a region" under mode a to a region under mode c - typically a jump, a fall through, or a CALL. We may refer to this as "action b."
- c. Richter's computer arrives in one of the above-listed three modes, which we may designate "mode c."
- d. As a side-effect of action b and/or the mode change from mode a to mode c (as opposed to as a result of anything that happens once the computer starts executing in mode c), the computer automatically performs some activity "behind the scenes" to adjust the context from mode a to mode c. Applicant believes that agreement was reached in the telephonic interviews that, in Richter '684, action d is the empty set, or at most routine inter-instruction housekeeping.
- e. Richter '684 takes some action in mode c, which we may refer to as "action e." If Applicant correctly understands the Examiner's position, the Examiner's current view is that action e is a MOVE from a memory location into a general register.

Applicant suggests that if Richter '684 anticipates claim 22, the Examiner should be able to readily select some precise mode for a, a precise action for b, a precise mode for c, a set of actions for d (which may be the null set), and some action e. Of course the Examiner is free to

create some other pattern, but the principle of Applicant's request remains the same - Applicant requests a precise designation of all method steps taken by Richter's computer that might be said to constitute an anticipation of the method of claim 22. Applicant believes that the disagreement persists because no precise fact pattern has been presented or analyzed.

Applicant suggests that no matter how broadly any claim limitation is construed, the Examiner will be unable to identify any actions d or e in Richter '684 that meet both limitations "altering the data storage content" and "creat[ing] a program context under the second data storage convention that is logically equivalent to a pre-alteration program context under the first data storage convention." When any data storage content is "altered" in Richter '684, the result is a new non-equivalent context. Applicant submits that the only way Richter '684 could possibly meet both claim limitations is if Richter '684 did an endian byte swap on memory. However, it has been agreed that such a byte swap process is not present in Richter '684.

III. Claim 87

Claim 87 has not yet been discussed in any telephone interview.

Under the agreements that have been reached on claim 22, it appears that the rejection of claim 87 is no longer tenable. Since its original filing, claim 87 has recited that certain steps occur "before executing the destination instruction." The only scenario proposed by the Examiner for meeting claim 22 occurs after execution at the destination is well under way.

IV. Claim 51

Applicant and Examiner have not yet discussed claim 51 in any telephone interview. Applicant's views on this are set out at page 12-13 of the "Response to Office Action" filed in December 2002. To summarize, the Office Action of October 2002 equates the word "page" and the word "segment." Applicant submits that there is no "meaning given to the term by those of ordinary skill in the art" that would support this claim construction, and that the Examiner's claim construction therefore violates MPEP § 2111.01. Richter himself states that "segments" are "not page-aligned" (Richter '684, col. 6, lines 62-67), thus demonstrating non-equivalence.

If the Examiner wishes to maintain this claim construction, Applicant requests some "substantial evidence" of the form discussed in the Memorandum sent by Stephen Kunin to the Examining Corps on February 21 2002, for example a reference that shows the equivalence of Intel-type segmentation and paging. In absence of some objective "reason" for asserting the

equivalence of these two terms, when the Richter '684 reference itself teaches the difference, Applicant suggests that the claim construction applied in the Office Action is "unreasonable."

V. "Calling convention"

Claims 23, 28, 29, 57, 75, 76, 78-83, 85, 95, 98-100, 102-103, 112, and 116-126 recite specific method steps that are performed in the context of crossing from one "calling convention" to another. In several cases, this language has persisted unamended from initial filing.

The only discussion in either Office Actions is (a) ¶ 7(c) of the first Office Action and ¶ 22 of the second Action, which discuss only a broader claim limitation ("two different computer architectures and/or execution conventions"), not the specific narrower "calling convention" limitation of any of these claims, and (b) ¶ 13 of the second Action, which makes only a bald assertion that Richter's computer implements two separate calling conventions, with neither a citation to any column and line number at which Richter expressly teaches calling conventions, or any showing of inherency.

Undeniably, Richter '684 teaches that certain things occur on a change of "computer architecture." But this change of "computer architecture," while relevant to claim 1, is entirely irrelevant to the "calling convention" recited in these claims.

Further, neither Office Action interrelates any "calling convention" that might be said to exist in Richter '684 to the other interrelated limitations on "calling conventions" recited in these claims. Neither Office Action designates any specific column or line number of Richter '684 that corresponds to the "calling convention" limitations of these claims.

For many of the same reasons discussed in connection with the endian byte-swap issue of claim 22, it is clear that any resolution of calling-convention issues is absent from Richter '684.

VI. Finality of the Office Action of December 2002

In view of a number of agreements that have been reached on some claims, and further in view of several undisputed omissions from the Office Actions, it is clear that finality of the second Action was premature, and that the Amendment of December 2002 should be entered.

- A. Claim 29 is not discussed in either Office Action. This prevents finality.
- B. It has been agreed that the Examiner's earlier claim construction of "necessarily" in claim 104 was not a "broadest reasonable interpretation," and that the rejection over

Richter '684 is withdrawn. The necessary corollary of that agreement is that claim 104 has never been searched under any correct "broadest reasonable interpretation," and that first examination of this claim still lays in the future. This, of course, requires that finality be withdrawn.

- C. Since its original filing, claim 87 has recited that certain steps occur "before executing the destination instruction." Claim 87 is the only claim that uses this language. Neither Office Action has even referred to this claim language, let alone identified any feature of Richter '684 that might correspond. These two separate omissions each prevent finality.
- D. Since their original filing, claims 27, 59, and 103 have recited that certain steps occur "before the recognized execution flow or transfer." No Office Action has designated a particular feature of Richter '684 that is performed "before the recognized execution flow or transfer." In the telephone interview, the Examiner has acknowledged that his best argument is that certain steps are performed after execution at the destination has advanced to the point that side-effects are being architecturally committed. This claim language has never been considered in a manner that would justify final rejection.
- E. 37 C.F.R. § 1.104(c)(2) reads as follows:

"When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified."

Rule 104(c)(2) raises two separate requirements, that the "particular part" of the reference be designated, and that the "pertinence ... must be clearly explained." The Office Actions only attempt to meet the first requirement – the Office Actions paraphrase each claim paragraph, and "designate" portions of the reference. However, both Office Actions are nearly entirely devoid of any attempt to meet the second requirement – almost no pertinence is explained. Applicant is left to read the Examiner's mind to figure out what claim construction was intended, what element of the reference is thought to correspond, etc. As became clear in the telephonic interviews, the omission of any required explanation of "pertinence" made it impossible for Applicant to determine the Examiner's concerns, let alone to respond to those concerns. The failure of the Office Actions to meet minimal requirements to explain the rejections has rendered the prosecution of this application a nearly meaningless exercise.

- F. In the telephonic interview, the Examiner conceded that he did not even realize that there was any requirement for showing of "reasonable expectation of success" for obviousness. When asked, the Examiner was unable to identify any such showing in the October Office Action. The first attempt at any such showing was in the Advisory Actions (e.g., the discussion of claim 87 in the Advisory Action of February 10, 2003, ¶ 4, top of page 2). Applicant and Examiner have agreed that MPEP § 706.02(j) sets out a non-exclusive list of minima for establishing *a prima facie* case of obviousness (e.g., the Advisory Action of March 12, 2003, ¶ 4). It is undisputed that the second paragraph of MPEP § 706.02(j) reads as follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met. ... Second, there must be a reasonable expectation of success.

It is undisputed that the October Office Action fails to demonstrate "reasonable expectation of success" for most of the obviousness rejections, and therefore fails to make out a *prima facie* case of obviousness of any claim. Final rejection is premature.

- G. Neither Office Action has designated particular method steps in Richter '684 that are said to correspond to the specific "calling convention" method steps discussed in point V above. This failure to designate any element of Richter '684 as corresponding to these claim limitations prevents finality.
- H. Claims 31, 52, 64, 70 and 90 recite that certain information is found in certain table entries. The Office Actions only note that Richter implements a TLB. The Office Action does not attempt to show that the relevant information in Richter '684 is ever stored in the Richter's TLB, as would be required by these claims. Such a showing would be impossible: Fig. 3 of Richter '684 shows that element 33 (referred to in paper 8 ¶ 10) is not stored in the TLB. Without a showing that all claim limitations are met, including the interrelationships among claim elements, the rejection is incomplete and final rejection is premature.
- I. Claims 81 and 122 recite "the physical resources of the microprocessor chip are associated to the logical resources of the first and second calling conventions according to a mapping that assigns corresponding logical resources to a common physical resource when the resources serve analogous functions in the two calling conventions." The Advisory Action points to paper 8 ¶ 7 as the best discussion of this claim language. Nothing remotely resembling this claim language appears in paper 8 ¶ 7 - for example, the word "mapping" appears nowhere in paper 8 ¶ 7. The Advisory Action is a clear admission that this language has never been examined. Final rejection is premature.
- J. Claims 72, 109 and 115 recite "an off-the-shelf operating system coded in the second instruction set, being an instruction set non-native to the computer providing access to a reduced subset of the resources of the computer."

The Advisory Action points to paper 8 ¶ 12, which in turn points to Richter '684, lines 42-57. This portion of Richter '684 teaches that the whole point of his invention is to permit "re-writing" of the "entire" operating system. This, of course, is the direct opposite of the "off the shelf" property.

Neither Office Action designates a particular feature of Richter '684 that corresponds to the "reduced set of the resources of the computer." The written rejection makes no attempt to set out the Examiner's thinking on this claim limitation. The written rejection makes no showing of "reasonable expectation of success" for how an operating system that lacks access to some resources of the computer could possibly operate.

Final rejection is premature.

- K. Neither Advisory Action has shown that any rejection of claim 22 was fairly stated in the October 2002 Action. All that has been shown is that a broader claim limitation was quoted from the claim. Neither Office Action, and neither Advisory Action, addresses the narrower limitation that has appeared without amendment in claim 22

since its original filing, and there has never been a designation of a particular feature of Richter '684 said to correspond, let alone that Richter's feature is interrelated to the rest of Richter's device in the manner claimed. The March 12 Advisory Action points to ¶ 13 of the first Office Action as a possible cure - but ¶ 13 provides no notice that it was intended to apply to claim 22, and could not reasonably have been construed to be so, since claims 21 and 22 are significantly different.

The only tangential designation of some corresponding feature of Richter '684 in either Office Action appears in ¶ 28 of the October 2002 Action, where it is conceded that, at best, a somewhat-similar limitation in claim 101 is only inherent in Richter '684, not explicit. The October concession confirms that the first Action provided neither a showing of explicit teaching nor any "rationale or evidence tending to show inherency" as required by MPEP § 2112. The only fair reading of the first Action is that this "altering storage" claim limitation was simply overlooked. Therefore, the § 102 rejection of claim 22 was incomplete in the first Action.

The two Advisory Actions at best present *ex post* explanations for what *might* have been done in the October 2002 Action, but they do not even attempt to show that the required steps were taken in that Office Action. Applicant appreciates the subsequent elaboration of the Office Action. This subsequent elaboration has significantly "filled in the gaps" in the Office Action. However, the Advisory Actions themselves make the existence of these gaps indisputably clear.

The rules for final rejection are structured to ensure that an applicant receives a complete and cogent statement of a rejection early enough to allow a proper response. An Advisory Action is simply too late to make these showings. The rules do not provide for making a first attempt to show a *prima facie* rejection in an Advisory Action, because an applicant has no opportunity to respond to grounds for rejection newly-stated in an Advisory.

The MPEP is also clear that it is an examiner's burden to make a clear *prima facie* showing; it is not an applicant's burden to discern what the examiner meant to write but did not. *Ex parte Gambogi*, 62 USPQ 1209, 1213 (Bd. Pat. App. & Interf. 2002) ("It is not an applicant's responsibility to set out a clear and concise rejection ... setting out a rejection is the responsibility of the examiner"). Applicant is entitled to a fair and complete statement of any rejection in an Office Action, not an Advisory Action, including an element-by-element designation of portions of the Richter '684 reference thought to correspond to the claims. Applicant is entitled to one opportunity to amend in response to any discussion of claim language that appeared in the originally filed claims, and at least one clear designation of a corresponding element of a reference and an explanation of pertinence for any newly-amended

claim language. An Office Action that fails to meet these minima, such as the Action of October 2002, is not properly made final.

To consider merely one example, because a showing of "reasonable expectation of success" is part of a *prima facie* showing, Applicant is entitled to have some such showing on each obviousness rejection, and is entitled to have at least one opportunity to respond, before any rejection may be made final. The reason is intensely practical - if either Office Action had provided any statement of "reasonable expectation of success," that slight added detail would almost certainly have permitted Applicant to discern that any disagreements centered on claim construction, not on the content of Richter '684. It would have been clear the degree of latitude the Examiner permits himself in asserting a "broadest reasonable interpretation." Without such statements of "reasonable expectation of success," no issue was even identified, let alone "developed for appeal," until the telephone interviews. Under both the literal procedural requirements of MPEP § 706.02(j) and the broader "appealable issue" and practical fairness concerns of MPEP § 706.07(b), finality is premature.

The Examiner does not have the power to overrule the Director to excuse the "reasonable expectation of success" requirement of MPEP §§ 2143 and 2143.02. If the Examiner has a written document, signed by someone at the Group Director level or above, that amends this requirement of the MPEP, Applicant requests a FAX copy at (212) 593-5955. In absence of such a written Order or Notice, Applicant is entitled to a showing of "reasonable expectation of success" before any obviousness rejection may be made final.

For each of these eleven reasons, finality of the October 2002 Action was premature. In view of the short period remaining for response, Applicant requests prompt confirmation either by email or by phone that finality is withdrawn, and that the amendment of December 2002 is being entered and given full consideration. If the Examiner still believes that finality is proper, or if he would like to discuss any of these issues further, he is requested to phone the undersigned at (212) 756 2522.

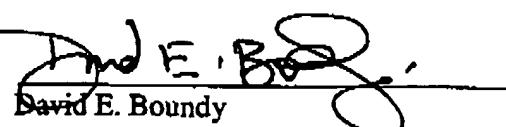
Kindly charge any additional fee, or credit any surplus, to Deposit Account 50-0675,
Order No. 5231.03-4000.

Respectfully submitted,

SCHULTE ROTH & ZABEL, LLP

Dated: March 23, 2003

By:


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